



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Arizona Strip Field Office
345 East Riverside Drive
St. George, UT 84790-9000



In reply refer to: AZ130-1700

December 12, 2005

NOTICE OF AVAILABILITY ***Burned Tortoise Habitat Restoration*** ***EA-AZ-130-2006-0008***

Dear Interested Party:

Please be advised that an Environmental Assessment (EA) EA-AZ-130-2006-0008 has been prepared for the proposed Burned Tortoise Habitat Rehabilitation Project. This EA is a public document, and it is available for your review and comment.

The BLM is proposing a combination of mechanical herbicide application, aerial seed application, mechanical seed incorporation, no treatment (control), and grazing exclusion (fence building) for each of five small fires which burned in tortoise habitat during the summer of 2005. Treatment implementation was developed in coordination with USGS as a full three factorial experimental design to ensure monitoring data will provide statistically valid habitat management information which can be used to facilitate future rehabilitation efforts in tortoise habitat.

The EA analyzes alternative strategies for rehabilitation of burned tortoise habitat, and describes an alternative that was considered but not analyzed.

This proposed action is in conformance with the Arizona Strip Resource Management Plan (1992, as amended), the Interim Management Policy for the Grand Canyon – Parashant National Monument (IM 2002-008), and includes measures to protect archaeological/cultural resources, and Mojave Desert Tortoise.

Written comments may be submitted to: Kathleen Harcksen, Asst Mgr.
BLM/Parashant National Monument
345 E. Riverside Drive
St. George, UT 84790
(435) 688-3380

Copies of the EA are available upon request from: Dori Taylor
BLM/Parashant National Monument
345 E. Riverside Drive
St. George, UT 84790
(435) 688-3345

This EA has also been posted on the Arizona Strip Field Office's web home page at: <http://www.az.blm.gov/asfo/index.htm> . The deadline for receipt of comments is January 12, 2006. Public comments are welcome and encouraged.

By law, the names and addresses of those commenting are available for public review during regular business hours. However, individual commenters may request that their name and/or address be withheld from the record. These requests will be honored to the extent allowable by law. If you wish your name and/or address withheld, you must state this prominently at the beginning of your comment letter. All comments from organizations or businesses will be available for public inspection in their entirety.

Sincerely,

Dennis Curtis
Parashant National Monument Manager

**UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
ARIZONA STRIP FIELD OFFICE
ENVIRONMENTAL ASSESSMENT**

EA-AZ-130-2006 -0008

I. PURPOSE AND NEED

Lightning-caused, wind driven fires burned 89,444 acres in the Pakoon Basin of the Grand Canyon – Parashant National Monument during the summer of 2005. Soils are now exposed to wind and water erosion. The fires killed native vegetation and removed forage and cover for indigenous wildlife, especially the Threatened Mojave Desert Tortoise. Approximately 36,057 acres of Critical Tortoise Habitat burned. There is a high probability that the areas burned will be further invaded and dominated by exotic annual bromes and other exotic invasive species.

The purpose of the proposed action is to stabilize and prevent unacceptable degradation to natural and cultural resources, to initiate the vegetative recovery of burned Mojave Desert Tortoise habitat, and to protect Monument objects.

A need exists to actively promote the re-establishment of burned vegetation in tortoise habitat:

1. The Mojave Desert Tortoise is federally listed as a Threatened Species, and it is explicitly depicted as a Monument Object to be protected.
2. Many thousands of acres of tortoise habitat burned, regionally, during the summer of 2005,
3. Arizona Mojave Tortoise habitat is now dominated by introduced, invasive brome species,
4. Brome species change the historic fire regime by decreasing the fire return interval (increasing fire frequency),
5. A shortened fire return interval would prevent the natural (unaided) recovery of native vegetation in the Mojave Desert,
6. Cultural resources are at risk, and
7. Soil productivity is being reduced by erosion.

Scope

The spatial scope of this Environmental Assessment is the Pakoon Basin of the Grand Canyon – Parashant National Monument, and the temporal scope for implementation and intensive monitoring is a period of three years. The temporal scope for extensive monitoring is indefinite.

Conformance with Land Use Plan

BLM is in the process of developing a resource management plan for the Arizona Strip District, including the Parashant National Monument. Until a Record of Decision is signed for a new RMP, the Parashant NM is managed in accordance with the 1992 RMP, as amended; the Presidential Monument Proclamation; and the Interim Management Policy.

The Arizona Strip District Resource Management Plan (RMP), January 1992, as amended, does not specifically mention the restoration of burned desert tortoise habitat. However, the proposed action is consistent with other decisions so this action is determined to be in conformance with the Arizona Strip RMP (1992, as amended). The proposed action is also consistent with the Monument Proclamation as it was developed to protect monument objects.

RMP decisions pertinent to burned area stabilization, rehabilitation, and tortoise habitat restoration include:

CL05 Surface disturbing activities on public land will be reviewed for cultural values by a cultural resource specialist or a permitted archeologist hired by an applicant.

TE02 Prior to surface disturbing activity on public land, a special status species review will be conducted by a qualified specialist.

TE16 Activities that could adversely affect the desert tortoise during their active season within tortoise habitat may be limited to the period between October 15 to March 15.

WS01 Manage vegetation cover towards ecological stability and sound long-term protective soil cover using mechanical, chemical, biological or fire tools for accomplishment.

WS17 Establish desired plant community objectives and include in Allotment Management Plans, Habitat Management Plans, Watershed Management Plans, and other applicable plans.

WS18 Develop management prescriptions or improvement practices to achieve desired plant community objectives.

WL03 Improve wildlife habitat through construction and maintenance of habitat improvement projects.

WL07 Manage wildlife habitat through the Habitat Management Plan process to achieve desired plant community objectives; practices could include mechanical treatments, livestock grazing, herbicide applications, prescribed and natural fire, reseeding, and water developments.

The Arizona Strip Resource Management Plan, Mojave Desert Amendment, Record of Decision, 1998 includes the following decisions pertinent to the proposed action:

Vegetation Resources:

No mechanical treatment or conversion will be allowed within tortoise ACECs unless it benefits or improves tortoise management.

Off-Highway Vehicles:

BLM will . . . prohibit all motorized vehicle activity off of designated open roads and trails, except as part of official fire suppression, search and rescue, law enforcement, or other similar administrative need (including access to project such as fences, waters, utilities).

TE13, Modification:

Intensify management of sensitive and endangered species consistent with biological opinions, recovery plans, Bureau policies, and the Endangered Species Act.

From the Biological Opinion 2-21-96-F-132: Reasonable and Prudent Measures which apply to the Proposed Action include:

1. *Personnel education programs, defined construction areas, well-defined operational procedures, and movement of tortoises out of harm's way shall be implemented for any activity that results in disturbance of desert tortoise habitat or may result in death or injury of a desert tortoise.*
2. *Measures shall be taken to limit the extent of projects authorized by the Bureau in DWMAs/ACECs.*
4. *Preconstruction surveys shall be conducted to locate desert tortoises that may be injured or killed as a result of proposed activities.*

Terms and conditions to implement the Reasonable and Prudent Measures 1, 2, and 4: (See Appendix A.)

The Proclamation (January 2000) designating the Grand Canyon-Parashant National Monument does not specifically address tortoise habitat nor rehabilitation of tortoise habitat. However, the desert tortoise is specifically included as one of the Monument Objects to be protected.

BLM Instruction Memorandum No. 2002-008, Interim Management Policy for Bureau of Land Management National Monuments and National Conservation Areas, includes the following decisions pertinent to the proposed action:

Noxious Weeds/Exotic Species:

Existing noxious weed control activities should continue.

Exotic species should not be introduced, unless doing so is essential to control noxious weeds or other undesirable species.

Vegetation Manipulation:

Vegetation manipulation should proceed only when consistent with conservation and protection of the national conservation area or monument resources.

Chaining and other vegetation manipulation methods that cause substantial surface disturbance shall not be permitted.

Relationship to Laws, Regulations, Other Plans

Pertinent laws include Federal Land Policy Management Act, Endangered Species Act, American Indian Religious Freedom Act, Archaeological Resources Protection Act, Native American Graves Protection and Repatriation Act; Executive Order 13007, Native American Consultation Handbook (8160) and its supplement (8160-1); plans include the

Desert Tortoise Recovery Plan, appropriate Biological Opinions, the Programmatic Agreement with the State Historical Preservation Office, and the 1991 Final EIS on Vegetation Treatment on BLM Lands.

Issues

In the areas burned, great potential exists for the establishment of a grass-fire cycle and type conversion to exotic annual grassland.

Soil productivity is being reduced by fire induced erosion of top soil.

Cultural resources are exposed because of the fires and susceptible to erosion, damage, and looting.

The essential shelter component of tortoise habitat is now missing in the areas burned.

Anecdotal information shows that aerial application of seed, alone, has not been a successful treatment to re-establish native vegetation in the Pakoon Basin.

Potential reduction of available tortoise forage during the 2006 active season, especially in areas treated with herbicides.

Potential harm to individual tortoise, tortoise egg clutches, and/or damage to burrow(s) during drill seeding, fence building activities, mechanical application of herbicides, and/or mechanical incorporation of seed.

II. PROPOSED ACTION AND ALTERNATIVES

Two treatment alternatives were fully developed and analyzed, as well as the No Action alternative. An additional alternative was considered but not analyzed.

ALTERNATIVE A: Proposed Action

The Proposed Action contains a combination of mechanical herbicide application, aerial seed application, mechanical seed incorporation, no treatment (control), and grazing exclusion (fence building) for each fire. Treatment implementation was developed in coordination with USGS as a full three factorial experimental design to ensure monitoring data will provide statistically valid habitat management information which can be used to facilitate future rehabilitation efforts in tortoise habitat. Individual treatment locations will be designated on the ground and subsequent maps developed for each fire. The following is a description of each of the treatment components and activities:

Alt A. Access

Access to the Cockscomb, Cedar Wash, and Jacob Fires would be by existing roads. Access to the Brumley Fire would be by existing roads and approximately 0.5 miles cross country. Access to the Nevershine Fire would be by existing roads and approximately 0.75 miles cross country. Cross country access would be confined to one, pre-located trail per fire, and would be used to facilitate All Terrain Vehicles (ATV) access, only. These trails would be visually obscured from the existing roads and rehabilitated following treatment implementation.

Alt A. Mechanical Application of Herbicide

To reduce vegetative competition from exotic brome species, the BLM proposes to contract for services to apply OUST® XP, EPA # 352-601, by hauling the herbicide on an ATV and manually applying to target vegetation. The active ingredient of OUST® XP, EPA # 352-601 is Sulfometuron methyl. The application rate would be 1oz per acre, mixed with 10 gallons of water as a carrier. The herbicide would be applied to 289 acres of the Brumley Fire, 276 acres of the Cedar Wash Fire, 92 acres of the Cockscomb Fire, 1,240 acres of the Jacob Fire, and 375 acres of the Nevershine Fire.

Existing native live plants would be avoided during herbicide application.

The contractor would supply, transport and apply the herbicide in accordance with applicable Federal, State, and local regulations. The contractor will be certified by and in the State of Arizona. The herbicide would be transported to the project sites via standard ½ ton and ¾ ton trucks and ATVs, in original containers, and mixed on site, following established protocol.

OUST® XP would not be applied on soils which could be translocated by wind (powdery, dry soil or light or sandy soil). Weed control objectives are best met when the herbicide is applied before or during the early stages of weed growth (before weeds develop an established root system). The treatment would be applied before March 15th, 2006.

See Appendix D. for OUST®XP Use Standard Safety Precautions, Chronic Toxicity, Ecological Effects, and Environmental Fate.

If discovered, noxious weeds would be treated through established Integrated Pest Management protocol, using the appropriate tools. If chemicals are needed, the treatment would be implemented using appropriate herbicides, and per prescriptions in the Vegetation Management Environmental Impact Statement for Thirteen Western States, 1991, and under existing NEPA and Pesticide Use Proposals.

Alt A. Aerial Seeding

To encourage the establishment and development of native grass and shrub species, the BLM proposes to aerially apply a seed mix of native species to 285 acres of the Brumley Fire, 368 acres of the Cedar Wash Fire, 122 acres of the Cockscomb Fires, 1,240 acres of the Jacob Fire, and 500 acres of the Nevershine Fire. Aerial application would be conducted in September of 2006.

The proposed seed mix and application rate for seeding would be as follows:

| <u>Species</u> | <u>Application Rate (lbs/ac)</u> |
|--------------------|----------------------------------|
| Sand Dropseed | 0.5 |
| Indian Ricegrass | 1.5 |
| Desert Needlegrass | 2.0 |
| Sideoats Grama | 1.5 |
| Western Wheatgrass | 2.0 |
| Big Galleta | 1.0 |
| AZ Threeawn | 1.0 |
| White Bursage | 0.5 |
| Joshua | 0.5 |

| | |
|------------|-----|
| Creosote | 0.5 |
| Mormon Tea | 0.5 |

Alt A. Seed Incorporation

To improve the germination and establishment success of the seeded native species, BLM proposes to incorporate the seed into the soil by dragging a chain (or similar devices) behind ATVs on 193 acres of the Brumley Fire, 184 acres of the Cedar Wash Fire, 61 acres of the Cockscomb Fire, 827 acres of the Jacob Fire, and 250 acres of the Nevershine Fire. Seed incorporation would be conducted following the aerial application and after October 15th, 2006.

Alt A. Fence Construction

To protect the treatments from grazing pressure by both cattle and burros, the BLM proposes to construct approximately 2.5 miles of fence around the Brumley Fire, 5.0 miles around the Cedar Wash Fire, 2.5 miles of fence around the Cockscomb Fire, 7.5 miles of fence around the Jacob Fire, and 3.5 miles of fence around the Nevershine Fire. These fences would remain in place until treatment objectives (see "Monitoring" at the end of this section) have been met. Surface disturbance would include the use of ATVs to facilitate fence construction, and would otherwise be confined to the locations where holes are dug to secure fence posts. ATV tracks would be obliterated once the fence has been constructed.

The following summary outlines the proposed treatments:

| <u>Fire Name</u> | <u>Aerially Seed</u> | <u>Drag</u> | <u>Herbicide</u> | <u>Control</u> | <u>Fence</u> |
|-------------------------|-----------------------------|--------------------|-------------------------|-----------------------|---------------------|
| Brumley | 385 ac | 193 ac | 289 ac | 96 ac. | 2.5 mi |
| Cedar Wash | 368 ac | 184 ac | 276 ac | 92 ac. | 5.0 mi |
| Cockscomb | 122 ac | 61 ac | 92 ac | 30 ac. | 2.5 mi |
| Jacob | 1,240 ac | 827 ac | 1,240 ac | 310 ac. | 7.5 mi |
| Nevershine | 500 ac | 250 | 375 ac | 125 ac. | 3.5 mi |
| Total | 2,615 ac | 1,515 ac | 2,212 ac | 653 ac | 21 mi |

Tortoise Mitigation Measures for Herbicide Application, Seed Incorporation and Fence Building:

1. Tortoise surveys would be conducted to locate desert tortoises that could be injured or killed as a result of proposed herbicide application, seed incorporation, and/or fencing activities, and completed on the Nevershine Fire by March 1st, 2006.
2. Any tortoise or tortoise eggs found would be relocated, by March 1st, 2006 on the Nevershine Fire. Relocations would be to the closest location not burned during the 2005 fires.
3. Should any burrows be excavated to relocate tortoise, the entrance to such burrows would be blocked, following excavation and tortoise and/or tortoise egg relocation.

4. All project personnel would receive tortoise education (See Terms and Conditions in Appendix A),
5. The herbicide application and seed incorporation areas, as well as the fence locations would be delineated on the ground, and
6. Operational procedures would be well defined.

Cultural Resource Mitigation Measures for Seed Incorporation and Fence Building:

1. A Class III cultural resources inventory would be completed prior to any surface disturbing activities and a Cultural Resource Project Report (CRPR) developed. Any recommendations in the CRPR would be followed prior to project initiation. During any surface disturbance all historic properties would be left intact and not disturbed.
2. An additional archaeological survey would be required in the event the proposed project location is changed, or additional surface disturbing activities are added to the project after the initial cultural resources inventory. Any such inventory would be completed prior to project initiation.
3. If, in connection with operations, any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 U.S.C. 3001) would be discovered, all work in the area of the discovery would stop immediately, the remains and objects would be protected, and the Monument Manager and Arizona Strip Native American Coordinator would be notified immediately. The area of the discovery would continue to be protected until notified by the Authorized Officer that operations may resume.

See Appendix E. for the Cultural Resource Project Report and any applicable recommendations and/or mitigation measures.

Alt A. Monitoring

Treatments in each fire would be monitored at existing key areas, where applicable (i.e., the key area is within the burned area and is within the treatment area). Vegetation objectives for each monitoring site would be developed, based on the applicable ecological site potentials, tempered by the changes induced by the fires and the treatments (especially the seed mix application). Those treated areas which do not have a representative existing key area would be evaluated to determine the need to establish temporary study sites to evaluate treatment success.

Frequency and species composition would be measured using a 200 plot transect using a 40 centimeter plot frame. Vegetative basal cover and canopy cover would be monitored using the step/point method of data collection.

Criteria used to measure success of these treatments include: seedling survival, perennial plant frequency, species composition, percent bare ground, rock, litter and vegetation, and invasive or noxious plant occurrence. Generally, success would be determined by achieving 40% or greater perennial plant frequency and/or a 15% or greater total perennial plant cover, by the fall of 2009.

Data collection would begin in summer of 2007 and be read in 2008 and 2009. Data

would be summarized each year and documented in the ES&R database.

In addition to the above described extensive monitoring, USGS proposes to intensively monitor each treatment, including controls, on each fire.

See Appendix B. for maps and Appendix C. for legal descriptions of the proposed treatment areas.

ALTERNATIVE B: Drill Seeding and Aerial Application of Herbicide

Alternative B. contains various combinations of aerial application of herbicides, aerial application of native seed, drill seeding, no treatment, and fence construction. The treatments are assigned by fire. The treatment elements and activities are:

Alt B. Access

Access to the Cockscomb, Cedar Wash, and Jacob Fires would be by existing roads. Access to the Brumley Fire would be by existing roads and approximately 0.5 miles cross country. Access to the Nevershine Fire would be by existing roads and approximately 0.75 miles cross country. Cross country access would be confined to one, pre-located trail per fire, and would be used to facilitate All Terrain Vehicles (ATV) access, only. These trails would be visually obscured from the existing roads and rehabilitated following treatment implementation.

Alt B. Aerial Application of Herbicide

To reduce vegetative competition from exotic brome species for up to 2 years, the BLM proposes to aerially apply OUST XP EPA # 352-601 (active ingredient Sulfometuron methyl) at 1oz per acre and 10 gallons of water as a carrier. A helicopter would apply the herbicide to 414 acres of the Cedar Wash Fire, 1,860 acres of the Jacob Fire, and 562 acres of the Nevershine Fire for a total of 2,836 acres.

Herbicide application would occur prior to March 15th, 2006 as treatment objectives are best met when applied before or during the early stages of weed growth (before weeds develop an established root system).

The contractor would supply, transport, and apply the chemical as well as provide any needed ground help. The contractor would be certified by and in the State of Arizona.

The herbicide would be transported to the Pagoon Air Strip via standard ½ ton and ¾ ton trucks in its original containers, loaded onto the aircraft as follows:

1. Fill spray tank 1/2 full of water.
2. With the agitator running, add the proper amount of OUST® XP.
3. Add the remaining water.
4. Agitate the spray tank thoroughly.

No applications would be made during gusty or windless conditions. OUST® XP would not be applied if powdery, dry soil or light or sandy soil are known to be prevalent in the area to be treated. Personnel would not enter treated areas during the restricted entry interval of 12 hours. For early re-entry, personal protective equipment must be worn.

OUST® XP spray preparations are stable if they are pH neutral or alkaline and stored at or

below 100o F., and applied to the target areas at a speed of 40 to 50 MPH with wind speeds of from 3 to 10 MPH.

See Appendix D. for OUST®XP Use Standard Safety Precautions, Chronic Toxicity, Ecological Effects, and Environmental Fate.

Any outbreaks of noxious weeds would be treated through Integrated Pest Management protocol, using the appropriate tools. If chemicals are needed, the treatment would be implemented using appropriate herbicides per prescriptions in the Vegetation Management Environmental Impact Statement for Thirteen Western States, 1991, and under existing NEPA and Pesticide Use Proposals.

Alt B. Aerial Seeding

To encourage the establishment and development of native grass and shrub species, the BLM proposes to aerially apply a seed mix of native species to 435 acres of the Brumley Fire, 1,860 acres of the Jacob Fire, and 562 acres of the Nevershine Fire. Aerial application would be conducted in September of 2006.

Alt B. Drill Seeding

To improve the germination and establishment success of the seeded native species, BLM proposes to drill seed 414 acres of the Cedar Wash Fire and 137 acres of the Cockscomb Fire. Drill seeding would be conducted after October 15th, 2006, by use of a rangeland drill pulled behind an agricultural tractor (see photo's below).





The rangeland drill facilitates good seed-to-soil contact by developing a series of small furrows in the seedbed, depositing of a measured portion of seed (an individual seed every 12 to 18 inches per furrow, at a shallow depth) in the furrows, and closing the furrows to cover the seed by dragging a chain or a pipe on chain. Application would be along the contour to minimize erosion from precipitation events.

The proposed seed mix and application rate for both seeding treatments (aerial and drill seeding) are as follows:

| <u>Species</u> | <u>Application Rate (lbs/ac)</u> |
|--------------------|----------------------------------|
| Sand Dropseed | 0.5 |
| Indian Ricegrass | 1.5 |
| Desert Needlegrass | 2.0 |
| Sideoats Grama | 1.5 |
| Western Wheatgrass | 2.0 |
| Big Galleta | 1.0 |
| AZ Threeawn | 1.0 |
| White Bursage | 0.5 |
| Joshua | 0.5 |
| Creosote | 0.5 |
| Mormon Tea | 0.5 |

Alt B. Fence Construction

To protect the treatments from grazing pressure by both cattle and burros, the BLM proposes to construct approximately 2.5 miles of fence around the Brumley Fire, 5.0 miles around the Cedar Wash Fire, 2.5 miles of fence around the Cockscomb Fire, 7.5 miles of fence around the Jacob Fire, and 3.5 miles of fence around the Nevershine Fire. These fences would remain in place until treatment objectives have been met. Surface disturbance would include the use of ATVs to facilitate fence construction, and would otherwise be confined to the locations where holes are dug to secure fence posts. ATV tracks would be obliterated once the fence has been constructed.

The following summary outlines the proposed treatments by fire:

| <u>Fire Name</u> | <u>Treatment(s)</u> | <u>Trt Ac/Total Ac.</u> | <u>New Fence (miles)</u> |
|------------------|-----------------------------|-------------------------|--------------------------|
| Brumley | Aerial Seeding | 435 out of 578 ac | 2.5 |
| Cedar Wash | Drill Seeding w/Herbicides | 414 out of 552 ac. | 5.0 |
| Cockscomb | Drill Seeding | 137 out of 183 ac. | 2.5 |
| Jacob | Aerial Seeding w/Herbicides | 1,860 out of 2,480 ac. | 7.5 |
| Nevershine | Aerial Seeding w/Herbicides | 562 out of 750 ac. | 3.5 |

Tortoise Mitigation Measures for Drill Seeding and Fence Building:

Same as Alternative A

Cultural Resource Mitigation Measures for Drill Seeding and Fence Building:

Same as Alternative A

Alt B. Monitoring

Treatments for each fire would be monitored at existing key areas, where applicable (i.e., the key area is within the burned area and is within the treatment area). Vegetation objectives for each monitoring site would be developed, based on the applicable ecological site potentials, tempered by the changes induced by the fires and the treatments (especially the seed mix). Those treated areas which do not have a representative existing key area would be evaluated to determine the need to establish temporary study sites to evaluate treatment success.

Frequency and species composition would be measured using a 200 plot transect and a 40 centimeter plot frame. Vegetative basal cover and canopy cover would be monitored using the step/point method of data collection.

Criteria used to measure success of these treatments include: seedling survival, perennial plant frequency, species composition, percent bare ground, rock, litter and vegetation, and invasive or noxious plant occurrence. Generally, success would be determined by achieving 40% or greater perennial plant frequency and/or a 15% or greater total perennial plant cover, by the fall of 2009.

Data collection would begin in summer of 2007 and be read in 2008 and 2009. Data would be summarized each year and documented in the ES&R database.

See Appendix B. for maps and Appendix C. for legal descriptions of the proposed treatment areas.

ALTERNATIVE C: No Action Alternative

Vegetation management treatments would not be implemented.

Alternatives Considered, but Not Evaluated

Complete Tortoise Relocation:

An alternative was considered which included the proposal to survey for and relocate any tortoise and/or tortoise eggs found in each of the areas proposed for herbicide treatment, prior to the treatment.

This alternative was not evaluated, as the following determinations were made:

It is not feasible to survey, let alone relocate tortoise on 2,836 acres prior to herbicide treatment in spring of 2006,

The herbicide, OUST®XP, is non-toxic to tortoise, neither through absorption nor ingestion.

III. AFFECTED ENVIRONMENT (AF)

For a more detailed description of the affected environment, refer the Arizona Strip District RMP and the Grand Canyon-Parashant National Monument Proclamation.

The following critical elements of the human environment are not present or are not affected by the proposed action or alternatives in this EA: Air Quality, Prime or Unique Farmlands, Floodplains, Environmental Justice, Drinking or Ground Water Quality, Hazardous or Solid Wastes, Mineral Management, Wild & Scenic Rivers, Wetlands and Riparian Areas, and Wilderness.

(AF) Resources of Importance to American Indians

The fires on the Arizona Strip occurred in areas previously occupied and/or currently used by various tribes in this region. Tribes that formerly used or claim a cultural affiliation with the proposed project areas where the fires occurred include the Paiute Indian Tribe of Utah, Kaibab Band of Paiute Indians, Moapa Band of Paiute Indians, Hualapai, Hopi and Navajo.

Types of sites or landscapes in the proposed project areas that were or could be affected include former habitation sites and villages, burials, traditional landscapes, current and past resource gathering areas, and sacred areas.

(AF) ACECs

The Nevershine Fire (750 ac.) burned entirely within the Pakoon ACEC, which was designated to protect Desert Tortoise habitat.

The primary vegetation constituent elements of forage and shelter (shade) no longer exist in this portion of the ACEC, which has burned.

The important constituent elements of tortoise habitat which may be affected by the

Proposed Action include:

Tortoise forage habitat

Tortoise shelter = structural vegetative habitat

(AF) Wilderness Characteristics

Lands surrounding and including the Nevershine and Cockscomb project sites have been identified as having wilderness characteristics, and these lands are being evaluated in the current Resource Management Planning effort for maintenance of those characteristics.

(AF) Special Status Species

The proposed project area is included in the Northeastern Mojave Recovery Unit, which is one of six Mojave Desert Tortoise (Federally listed Threatened Species) recovery units established through the 1994 Recovery Plan. Approximately 36,057 acres of Critical Desert Tortoise habitat burned in the Pakoon Basin, and approximately 6,531 acres burned in the Pakoon ACEC. The proposed project is entirely within desert tortoise Critical Habitat.

The tortoise is an herbivore that spends most of its' life in underground burrows. It can live 80 years and has a low reproductive rate.

Desert tortoise populations have declined precipitously since the 1980s.

The primary vegetation constituent elements of forage and shelter (shade) have been removed in the areas which have burned.

Recent data on tortoise populations in the project area is unavailable. During a 1991 survey of two sections (T34N, R15W, Sections 3 & 4) ten live tortoises and 11 sets of shell remains were located in 60 person days of searching, using standard field techniques. The sex ratio was 67% male to 33% female. The size class structure was 10% immature and 90% adult. One tortoise had definite symptoms of Upper Respiratory Disease (URTD) and two had possible symptoms.

The other following federally listed, proposed, candidate, State, or BLM sensitive species may occur within or adjacent to the project area:

- Bald eagle (*Haliaeetus leucocephalus*) (Threatened - proposed for de-listing)
- California condor (*Gymnogyps californianus*) (Endangered – experimental, non-essential population)
- Peregrine falcon (*Falco peregrinus*) (Delisted, monitoring is ongoing. AZ species of concern.)
- Ferruginous hawk (*Buteo regalis*) (AZ species of concern)
- Western burrowing owl (*Athene cunicularia hypugaea*) (BLM sensitive)
- Loggerhead shrike (*Lanius ludovicianus*) (BLM sensitive)
- Banded gila monster (*Heloderma suspectum cinctum*) (BLM sensitive)

- Common chuckwalla (*Sauromalus ater*) (BLM sensitive)
- Bats. The following BLM Sensitive species of bats are known to occur on the AZ Strip: spotted bat (*Euderma maculatum*), Allen's big-eared bat (*Idionycteris phyllotis*), small-footed myotis (*Myotis ciliolabrum*), long-eared myotis (*Myotis evotis*), fringed myotis (*Myotis thysanodes*), long-legged myotis (*Myotis volans*), big free-tailed bat (*Nyctinomops femerosaccus*).

(AF) Bald eagles Typical habitat components include bodies of water with fish, which are not readily available in the Mojave Desert. Bald eagle data has not been collected on the Arizona Strip, and there have been no known nests. In winter they may fly over the proposed project area.

An experimental non-essential (ESA 10j) population of California condors was established on the Vermilion Cliffs in 1996. Condors may fly over or forage on carrion within the proposed project area at any time of the year. As of June 2005, there were 53 condors in the wild in northern Arizona. The reintroduced population appears to be stable or slightly increasing. The Recovery Plan objectives for the Arizona population are to reach at least 150 individuals with 15 breeding pairs.

(AF) Peregrine falcons range across the Arizona Strip and nest on cliff faces.

(AF) Ferruginous hawks. Typical habitat requirements are open country with pinyon-juniper or woodland periphery, which are present on the Strip. However, the proposed project area is at the edge of the breeding range and nesting has not been documented. They are uncommon visitors in winter months. There are probably only 5-10 known laying pairs in the state of Arizona. Ferruginous hawk data has not been collected on the Arizona Strip.

(AF) Burrowing owls have been observed on the AZ Strip, occasionally. And on rare occasions, have been known to nest on the AZ Strip. However, they are uncommon. Burrowing owls typically nest in burrows excavated by mammals and are most often associated with prairie dog towns. There are no prairie dog towns on the Strip, although many areas have sufficient rodent burrows which could provide suitable nesting sites for burrowing owls. In the proposed project area, the vegetative habitat requirements are in place, however few suitable burrows exist.

(AF) Loggerhead shrikes are yearlong residents on the AZ Strip and are fairly common. Habitat requirements include tree and/or shrub nesting sites, perches for hunting and territory advertisement, open foraging areas, and prey impaling sites. Rangewide, the loggerhead shrike is in decline due primarily to loss and degradation of suitable habitat. AZ Strip habitat has not been altered to the degree of most of the overall shrike range habitat.

(AF) Gila monsters prefer low elevation desert habitat. They specialize in eating eggs from reptile and bird nests, as well as juvenile mammals. They spend over 95% of the time in underground shelters.

(AF) Chuckwallas are large, bulky lizards occurring in the desert country of the southwest. They are mostly herbivorous, eating fruit, leaves, buds, and flowers.

(AF) Bats require habitat for roosting and foraging, primarily near water. The proposed project area provides only marginal amounts of these habitat requirements. Sensitive bat species are found in greater abundance in other areas of the AZ Strip.

(AF) Wildlife

The proposed project area is in the Arizona Game and Fish Department's Game Management Unit (GMU) 13B. Mule deer (*Odocoileus hemionus*) and desert bighorn sheep (*Ovis canadensis*) are big game animals that can be found in this GMU. Deer habitat in the proposed project area of the GMU is considered marginal habitat, and deer more commonly use areas to the west and north of the proposed project area. Bighorn sheep habitat exists near the Nevershine and Cockscomb fires. Occasionally mule deer move down from the Virgin Mountains onto the upper Virgin Slope. Desert bighorn sheep live in the wilderness areas above the desert, and this species also occasionally wanders into the area.

Other wildlife in the proposed project area includes a variety of passerine birds, reptiles, small mammals, and invertebrates. Rabbits and Gambel's quail are the two most common game species in the area.

Forage and vegetative cover for indigenous wildlife has been removed by the fires.

(AF) Vegetation

Although the Pakoon Basin vegetation is described as Desert Scrub, the Pakoon Basin vegetation is dominated by invasive, exotic annual vegetation species. These non-native species have shortened the fire return interval and reduced the ability of native vegetation to recover from fire.

Cheat grass and other exotic invasive species have invaded previously burned areas that have not been treated.

The ability to successfully re-establish native vegetation species composition and vertical structure is difficult, due to marginal and unpredictable precipitation and the competition from exotic, invasive annual grass species.

OUST®XP is absorbed by the leaves and roots of the weed and stops plant growth by inhibiting cell division in growing tips, roots and shoots. OUST®XP has a half-life of approximately one month in soil. In several field dissipation studies half of the initial applied amount of the compound remained for one to three weeks, depending on the soil type and vegetative cover. It remains in the soil longer with cool temperatures, low soil moisture, or alkaline soil pH.

(AF) Soil,

Brumley Fire soils consist mainly of: Moderately steep to steeply sloping Torriorthents and Calciorthids that have severe water erosion potentials; Gently sloping to moderately steep Winkel soils that have slight to moderate water erosion potentials.

Cedar Wash Fire soils consist mainly of: Rolling to hilly Hobog soils that have moderate erosion potentials; Sloping to moderately steep Meadview soils that have

moderate erosion potentials; Moderately steep Yurm family soils that have moderate to severe erosion potentials.

Cockscomb Fire soils consist mainly of: Moderately steep to steep Yurm family and Meadview soils that have moderate to severe erosion potentials.

Jacob Fire soils consist mainly of: Moderately steep to steep Yurm family and Meadview soils that have moderate to severe erosion potentials.

Nevershine Fire soils consist mainly of: Gently sloping Arizo soils that have slight erosion potentials; Gently sloping to sloping Tonopah soils that have moderate wind and water erosion potentials; Steep Yurm family and Meadview soils that have severe erosion potentials.

These soils have very thin A horizons, which will eventually erode away if good perennial ground cover is not established. Annual grasses are good temporary cover, but they increase the fire frequency, preventing native perennial species from becoming established, and they perpetuate the resulting fire induced erosion.

(AF) Cultural Resources

Isolated artifacts and significant sites, archaeological and historic in nature, are present throughout the proposed project area. Some of these may qualify for listing on the National Register of Historic Places.

(AF) Recreation

Recreation in the proposed project area is primarily composed of driving for pleasure, hunting and sightseeing. Recreation activities occur primarily in “semi-primitive, motorized” recreation settings for the majority of the project area. Semi-primitive, motorized settings are characterized by predominantly natural or natural-appearing environment of moderate to large size where the concentration of users is low, but there is often evidence of other users. Minimum on-site controls and restrictions may be present, but are subtle.

Portions of the Brumley and Cedar Wash proposed project sites lie within a “roaded natural” setting. This recreation setting is characterized by predominantly natural-appearing environment with moderate evidences of the sights and sounds of man. Such evidences usually harmonize with the natural environment. Resource modification and utilization practices are evident, but harmonize with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Conventional motorized use is provided for in construction standards and design of facilities, including roads.

The majority of the Nevershine proposed project site lies within a “semi-primitive, non-motorized” recreation setting. This setting is characterized by predominantly natural or natural-appearing environment of moderate to large size. Interaction between users is low, but there is often evidence of other users. Minimum on-site controls and restrictions may be present, but are subtle.

(AF) Visual Resources

Most of the proposed project area is classified by the 1992 RMP as Visual Resource Management Class (VRM) IV. However, small portions of the Cedar Wash project site are classified as VRM Class II and a portion of the Nevershine project site is classified as VRM Class III. The objective for VRM Class IV areas is “to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high.” The objective for VRM Class II is “to retain the existing character of the landscape. The level of change to the characteristic landscape should be low” and the objective for Class III is “to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.”

(AF) Grazing Management

The Brumley Fire (578 ac.) burned entirely within the Cottonwood Allotment.

The Cedar Wash Fire (552 ac.) burned entirely within the Cottonwood Allotment.

The Cockscomb Fire (183 ac.) burned entirely within the portion of the Mosby Nay Allotment not previously closed to livestock grazing.

The Jacob Fire (2,680 ac.) burned entirely within the Cottonwood Allotment.

The Nevershine Fire (750 ac.) burned entirely within the Tassi grazing allotment.

The Tassi Allotment was closed to livestock grazing by the 1998 Mojave Desert Amendment to the Arizona Strip RMP. However, several trespass cattle remain on the allotment.

The amount of available forage has been reduced by the fires.

(AF) Wild Horses and Burros

The Tassi Herd Management Area (HMA) covers the lower end of the Pakoon Basin.

The Allowable Management Level has been set at zero. However, burros still occupy the HMA. Burros will always be able to gain access to the Pakoon Basin from the Gold Butte HMA, across the Nevada state line

(AF) Socio/Economic

Mesquite, NV is located approximately 15 miles north of the Cedar Wash fire. Primary industries are gambling and construction, with some ranching and farming.

Several small unincorporated communities (Bunkerville, NV, and Beaver Dam, Desert Springs, Littlefield, Scenic, and Arvada, AZ) are located approximately 20 to 25 miles north of the Cedar Wash fire.

IV. ANTICIPATED ENVIRONMENTAL IMPACTS

IMPACTS OF ALTERNATIVE A.

Alternative A. would have no impact on: Air Quality, Prime or Unique Farmlands, Floodplains, Environmental Justice, Drinking or Ground Water Quality, Hazardous or

Solid Wastes, Mineral Management, Wild & Scenic Rivers, Wetlands and Riparian Areas, and Wilderness.

Implementation of Alternative A. would result in:

Short Term Impacts: Less than one year

Long Term Impacts: > one year

Alt. A: Resources of Importance to American Indians

Implementing Alternative A. may result in impacts to resources of importance to American Indians. These resources include:

- Elements of traditional landscapes, especially plant and animal species. These elements would be identified in consultation with the tribes concerned. Tribal recommendations for protection and/or enhancement of these species would be considered and implemented, as much as practicable, during project implementation.
- National Register eligible traditional cultural properties, known or presumed American Indian grave sites, and places of historical significance to American Indians. These elements would be assessed and appropriate mitigation would be developed prior to project initiation (36CFR800 procedures would be followed).
- Sacred sites or sacred areas. Tribal mitigation recommendations for any sacred sites or sacred areas which could be impacted by project activities would be followed, as much as possible.

Alt. A: ACECs

Short-term:

The amount of tortoise forage vegetation would be reduced on 375 acres of the Nevershine Fire during the summer of 2006 due to the residual effects of OUST®XP on vegetation.

Long-term:

Improved amounts and quality of tortoise forage on 375 acres, as native seeded species become established.

Improved tortoise shelter as the vertical vegetation structure on 375 acres as the seeded and sprouting shrub and tree species become established.

Alt. A: Wilderness Characteristics

The proposed actions at the Nevershine and Cockscomb fires may contribute to maintaining or enhancing a higher degree of naturalness by inhibiting the advance of non-native annual grasses and promoting the re-establishment of native flora. Therefore, the proposed action should not preclude future

management consideration of these areas for maintaining wilderness characteristics.

Special Status Species

Alt. A: Mechanical Application of Herbicides

Short-term:

The amount of tortoise forage on 2,272 acres would be reduced during the summer of 2006, due to the residual effects of OUST®XP on vegetation.

Sulfometuron-methyl is the active ingredient in OUST®XP. In *Recommended Protection Measures for Pesticide Applications in Region 2 of the U.S. Fish and Wildlife Service*, sulfometuron-methyl has a toxicity group rating of 0 for reptiles, mammals, and birds. Class 0 pesticides are practically nontoxic to specific groups of animal species and ordinarily do not require protection measures. Ingestion or absorption of this compound by any reptiles, mammals, or birds should not result in adverse impacts.

Long-term:

Improved amounts and quality of tortoise forage on 2,272 acres, as native seeded species become established.

Improved tortoise shelter and vertical vegetation structure on 2,272 acres as the seeded and sprouting shrub and tree species become established.

Alt. A: Aerial Application of Seed

Short-term: No impacts

Long-term:

Improved amounts and quality of tortoise forage on 1,961 acres as native seeded grass species become established.

Improved vertical vegetation structure on 1,961 acres as the seeded and sprouting native shrub and tree species become established.

Alt. A: Seed Incorporation

Short-term:

No impacts to tortoise from seed incorporation on 1,515 ac. due to compliance with the mitigation measures developed from the Biological Opinion 1-21-96-F-132, Reasonable and Prudent Measures 1, 3, and 4 – along with the pertinent Terms and Conditions. Tortoises within the project area would be relocated, out of harm's way, the minimum distance possible, to appropriate unburned habitat.

Long-term:

Improved amounts and quality of tortoise forage of native species on 1,515 acres as native seeded grass species become established.

Improved vertical vegetation structure on 1,515 acres as the seeded and sprouting native shrub and tree species become established.

Alt. A: Fence Building

Short-term:

No impacts to tortoise along 21 miles of new protective fence construction due to compliance with the mitigation measures developed from the Biological Opinion 1-21-96-F-132 Reasonable and Prudent Measures 1, 3, and 4 – along the pertinent Terms and Conditions.

Long-term:

Increased amounts and quality of tortoise forage of native species on 1,634 acres as native seeded and non-native grass species become established, and are protected from grazing.

Improved vertical vegetation structure on 1,634 acres as the seeded and sprouting native shrub and tree species become established and are protected from grazing.

Small increases in amounts and quality of tortoise forage of native species on 1,634 acres as native grass species become established, and are protected from grazing.

Small increase vertical vegetation structure on 1,634 acres as the seeded and sprouting native shrub and tree species become established and are protected from grazing.

Alt. A: Special Status Species

Desert Tortoise. Reducing flashy fuel build up by herbicide application and fence building could negatively affect tortoise by eliminating sources of forage over the short term. However, removal of weeds and a reduction in the risk of a future catastrophic wildfire would have positive long-term effects on habitat components.

Eggs or tortoises might be missed by surveying biologist. Mechanical treatments would be expected to increase the potential for erosion immediately following treatments resulting in some sediment inflow into burrows. Like ash and sediment resulting from fire, this sediment could cause mortality by smothering eggs that may have been missed for relocation.

Bald eagle Negligible probability of being hit by aircraft aerially applying seed. Prevention of non-native species reestablishment should create more open habitat conditions than those which would occur without rehabilitation treatments, potentially allowing better location of prey or carrion.

California Condor Negligible probability of being hit by aircraft aerially applying seed. Prevention of non-native species reestablishment should create more open habitat conditions than those which would occur without rehabilitation treatments, potentially allowing better visual location of carrion

Peregrine Falcon Negligible probability of being hit by aircraft aerially applying seed. Prevention of non-native species reestablishment should create more open habitat conditions than those which would occur without rehabilitation treatments, potentially allowing better visual location of prey.

Ferruginous Hawk Negligible probability of being hit by aircraft aerially applying seed. Removal of non-native species should create more open habitat conditions than those which would occur without rehabilitation treatments potentially allowing better visual location of prey.

Western burrowing owl. Negligible probability of being hit by aircraft aerially applying seed. Burrows may be crushed. Prevention of non-native species should create more open habitat conditions than those which would occur without rehabilitation treatments, potentially allowing better visual location of prey.

Loggerhead shrike. Negligible probability of being hit by aircraft aerially applying seed. Burrows may be crushed. Prevention of non-native species should create more open habitat conditions than those which would occur without rehabilitation treatments, potentially allowing better visual location of prey.

Banded gila monster. Similar life histories and habitat requirements as the tortoise. Reducing flashy fuel build up by herbicide application could negatively affect gila monster by eliminating sources of cover in the short term. However, removal of weeds and a reduction in the risk of a future catastrophic wildfire would have positive long-term effects on habitat components. Gila monsters will not specifically be surveyed for and relocated prior to treatments. Burrows could be crushed by drill seeding. Mechanical treatments would be expected to increase the potential for erosion immediately following treatment, resulting in some sediment inflow into burrows. Like ash and sediment resulting from fire, this sediment could cause mortality by smothering eggs.

Common chuckwalla. Similar life histories and habitat requirements as the tortoise. Reducing flashy fuel build up by herbicide application could negatively affect common chuckwalla by eliminating sources of cover in the short term. However, removal of weeds and a reduction in the risk of a future catastrophic wildfire would have positive long-term effects on habitat components. Chuckwallas will not specifically be surveyed for and relocated prior to treatments. Burrows could be crushed by drill seeding. Mechanical treatments would be expected to increase the potential for erosion immediately following treatment, resulting in some sediment inflow into burrows. Like ash and sediment resulting from fire, this sediment could cause mortality by smothering eggs.

Sensitive bat spp. No impact as this species is out at night when there are no activities.

Alt. A: Wildlife

Short-term:

Small amount of disturbance to some individuals during project work. No impacts.

Long-term:

Increased amounts and quality of native vegetation species on 1,634 acres as native grass species become established, and are protected from grazing.

Improved vertical vegetation structure on 1,634 acres as the seeded and sprouting native shrub and tree species become established.

Small increases in amounts of native vegetation species on 1,634 acres as native seeded grass species become established, and are protected from grazing.

Small increases in vertical vegetation structure on 1,634 acres as the seeded and sprouting native shrub and tree species become established.

There would be an increase in forage and cover for mule deer and big horn sheep.

Alt. A: Vegetation

Short-term:

Annual and perennial vegetation growth on 2,272 acres would be reduced due to the residual effects of the herbicide.

Long-term:

Increased amounts and diversity of native species on 2,615 acres as native grass species become established, and are protected from grazing.

Improved vertical vegetation structure on 2,615 acres as the seeded and sprouting native shrub and tree species become established.

Small increased in amounts and diversity of native species on 653 acres as native seeded grass species become established, and are protected from grazing.

Small increase vertical vegetation structure on 653 acres as the seeded and sprouting native shrub and tree species become established.

Alt. A: Soil

Short-term:

Minimal erosion impacts from seed incorporation on 1,515 acres, 21 miles of fence building, and reduced effective ground cover due to residual effects of herbicide application on 2,272 acres.

Long-term:

Reduced erosion from increased amounts and quality of effective ground cover on 2,615 acres as native seeded grass species become established, and are protected from grazing.

Small increases in amounts and quality of effective ground cover on 653 acres as native seeded grass, shrub and tree species become established, and are protected from grazing.

Alt. A: Cultural

Impacts to cultural resources would be minimized to the extent possible during treatment implementation. Should any historic properties (sites eligible for the National Register of Historic Places) be identified during the cultural resource inventories, they would be flagged and avoided by any surface disturbing activities. Revegetation of burned areas should help decrease erosion which will benefit cultural resources by stopping displacement of artifacts and degradation of any cultural features. If human remains or sacred objects are encountered during the stabilization or rehabilitation projects, then the inadvertent discovery provisions of NAGPRA would apply and would be followed.

Alt. A: Recreation

The seed incorporation by dragging a device behind an ATV would minimally impact physical recreation settings and recreation opportunities in the short term due to the temporary presence of vehicle tracks. In the long-term, these impacts would be reduced or eliminated due to wind, rain and project success. Likewise, the construction of new fencing would have a slight to minor impact to recreation settings and recreation activity opportunities in the short-term due to fencing as an impediment to access, as well as the increase in evidence of human use created by the placement of the fencing. In the long-term, with the removal of the fencing upon achievement of project objectives, fencing would have no impact to recreation settings and activity opportunities.

Alt. A: Visual Resources

The long-term success of the proposed action could contribute to reducing the visual contrast created by the fires. Application of the seed mixture, if successful, would contribute to re-establishing a variety of visual forms, lines, colors and textures where fire has virtually eliminated any variety due to the monotypic “look” of pioneering annual grasses. Conversely, in the short term, the proposed action would create slight to minor visual contrast from the residual vehicle tracks. Also in the short-term, the proposed action would add weak to moderate horizontal structural lines to the landscape, due to the construction of temporary perimeter fencing. In the long-term, these effects would be negligible to nonexistent with the establishment of the native seed mix and the removal of the fencing.

Alt. A: Grazing Management

Both Cottonwood and the Mosby-Nay Allotments have year round livestock grazing. During the short term, livestock forage on the burnt areas has been lost, but in the long-term forage would again be available. During the interim, in the remainder of the grazing allotments outside of the treatment areas, livestock grazing operations would continue to function as normal with grazing monitored annually to ensure compliance with grazing permit and allotment management plan.

Alt. A: Wild Horses and Burros

Minimal impact can be expected to the few remaining wild burros.

Alt. A: Socio/Economic

Impacts to the socio/economic environment would consist of non-measurable increases in use of tourist facilities as outside contractors execute contracts for treatment implementation.

CUMULATIVE IMPACTS OF ALTERNATIVE A, PROPOSED ACTION

Impacts of human activities within the area were analyzed in the Arizona Strip RMP.

The cumulative impacts of the Proposed Action with past and reasonably foreseeable future actions are indiscernible, except for the potential increased information and subsequent knowledge regarding land management in the Mojave Desert.

IMPACTS OF ALTERNATIVE B.

Alternative B. will have no impact on: Air Quality, Prime or Unique Farmlands, Floodplains, Environmental Justice, Drinking or Ground Water Quality, Hazardous or Solid Wastes, Mineral Management, Wild & Scenic Rivers, Wetlands and Riparian Areas, and Wilderness.

Implementation of the Alternative B. would result in:

Alt. B: Resources of Importance to American Indians

Impacts from implementing Alternative B. may result in impacts to resources of importance to American Indians.

- Elements of traditional landscapes, especially plant and animal species. These elements would be identified in consultation with the tribes concerned. Tribal recommendations for protection and/or enhancement of these species would be considered and implemented, as much as practicable, during project implementation.
- National Register eligible traditional cultural properties, known or presumed American Indian grave sites, and places of historical significance to American Indians. These elements would be assessed and appropriate mitigation would be developed prior to project initiation (36CFR800 procedures would be followed).

- Sacred sites or sacred areas. Tribal mitigation recommendations for any sacred sites or sacred areas which could be impacted by project activities would be followed, as much as possible.

Alt. B: ACECs

Short-term:

Reduced amount of tortoise forage on 562 acres of the Nevershine Fire treated area during the summer of 2006, due to the residual effects of the herbicides on cheat grass.

Long-term:

Improved amounts and quality of tortoise forage on 562 acres, as native seeded species become established.

Improved tortoise shelter as the vertical vegetation structure on 562 acres as the seeded and sprouting shrub and tree species become established.

Alt. B: Wilderness Characteristics

The proposed actions at the Nevershine and Cockscomb project sites may contribute to maintaining or enhancing a higher degree of naturalness by inhibiting the advance of non-native annual grasses and promoting the re-establishment of native flora. Conversely, in the short term, the use of rangeland drilling to distribute native seed mixtures would diminish naturalness due to the presences of vehicle tracks and long, linear furrows. In the long-term, these effects would be negligible. Therefore, the proposed action should not preclude future management consideration of these areas for maintaining wilderness characteristics.

Special Status Species

Alt. B: Aerial Application of Herbicides

Short-term:

Herbicide application would result in a reduced amount of tortoise forage on 2,836 acres (Cedar Wash, Jacob, and Nevershine Fires) for the summer of 2006, due to the residual effects of the herbicide on annual and perennial vegetation.

Sulfometuron-methyl is the active ingredient in OUST. In *Recommended Protection Measures for Pesticide Applications in Region 2 of the U.S. Fish and Wildlife Service*, sulfometuron-methyl has a toxicity group rating of 0 for reptiles, mammals, and birds. Class 0 pesticides are practically nontoxic to specific groups of animal species and ordinarily do not require protection measures. Ingestion or absorption of this compound by any reptiles, mammals, or birds should not result in detrimental effects.

See Appendix D. for OUST®XP Use Standard Safety Precautions, Chronic Toxicity, Ecological Effects, and Environmental Fate.

Long-term:

Improved amounts and quality of tortoise forage on 2,836 acres, as native species become established.

Improved tortoise shelter and vertical vegetation structure on 2,836 acres as the seeded and sprouting shrub and tree species become established.

Alt. B: Aerial Application of Seed

Short-term: No impacts

Long-term:

Improved amounts and quality of tortoise forage on 2,322 acres (Jacob and Nevershine Fires), as native seeded grass species become established.

Improved vertical vegetation structure on 2,322 acres as the seeded native shrub and tree species become established.

Alt. B: Drill Seeding

Short-term:

This method is the most practical and most commonly used method on rangelands that are accessible to machinery because it is less expensive than tillage and because it reduces the risk of erosion associated with tillage. This is especially important in arid and semiarid areas where tillage may exacerbate wind and water erosion.

Minimal impacts to tortoise on 551 ac. (Cedar Wash and Cockscomb Fires) due to compliance with the mitigation measures developed from the Biological Opinion 1-21-96-F-132 Reasonable and Prudent Measures 1, 3, and 4 – along with the pertinent Terms and Conditions. Tortoises within the project area would be relocated the minimum distance possible out of harm's way to appropriate, unburned habitat. However, the possibility exists for a tortoise or clutch of eggs to be missed.

Long-term:

Improved amounts and quality of tortoise forage of native species on 551 acres as native seeded grass species become established.

Improved vertical vegetation structure on 551 acres as the seeded and sprouting native shrub and tree species become established.

Alt. B: Fence Building

Short-term:

Minimal impacts to tortoise along 21 miles of new protective fence construction due to compliance with the mitigation measures developed from the Biological Opinion 1-21-96-F-132 Reasonable and Prudent Measures 1, 3, and 4 – along the pertinent Terms and Conditions. However, the possibility exists for a tortoise or clutch of eggs to be missed.

Long-term:

Increased amounts and quality of tortoise forage of native species on 2,836 acres (Cedar Wash, Jacob, and Nevershine Fires) as native seeded grass species become established, and are protected from grazing.

Improved vertical vegetation structure on 2,836 acres as the seeded native shrub and tree species become established.

Small increased in amounts and quality of tortoise forage of native species on 137 acres (Cockscomb Fire) as native seeded grass species become established, and are protected from grazing.

Small increase vertical vegetation structure on 137 acres as the seeded native shrub and tree species become established.

Alt. B:

Desert Tortoise: Prevention of hazardous ground fuel build up by herbicide application and fence building could negatively affect tortoise by eliminating sources of cover over the short term. However, removal of weeds and a reduction in the risk of a future catastrophic wildfire would have positive long-term effects on habitat components. Burrows could be crushed by drill seeding. Eggs or tortoises might be missed by surveying biologist. Mechanical treatments would be expected to increase the potential for erosion immediately following treatments resulting in some sediment inflow into burrows. Like ash and sediment resulting from fire, this sediment could cause mortality by smothering eggs that may have been missed for relocation.

Bald eagle: Negligible probability of being hit by aircraft aerially applying seed. Prevention of non-native species reestablishment should create more open habitat conditions than those which would occur without rehabilitation treatments, potentially allowing better location of prey or carrion.

California Condor: Negligible probability of being hit by aircraft aerially applying seed. Prevention of non-native species reestablishment should create more open habitat conditions than those which would occur without rehabilitation treatments, potentially allowing better visual location of carrion.

Peregrine Falcon: Negligible probability of being hit by aircraft aerially applying seed. Prevention of non-native species reestablishment should create more open habitat conditions than those which would occur without rehabilitation treatments, potentially allowing better visual location of prey.

Ferruginous Hawk: Negligible probability of being hit by aircraft aerially applying seed. Removal of non-native species should create more open habitat conditions than those which would occur without rehabilitation treatments potentially allowing better visual location of prey.

Western burrowing owl: Negligible probability of being hit by aircraft aerially applying seed. Burrows may be crushed. Prevention of non-native species should create more open habitat conditions than those which would occur without rehabilitation treatments, potentially allowing better visual location of prey.

Loggerhead shrike: Negligible probability of being hit by aircraft aerially applying seed. Burrows may be crushed. Prevention of non-native species should create more open habitat conditions than those which would occur without rehabilitation treatments, potentially allowing better visual location of prey.

Banded gila monster: Similar life histories and habitat requirements as the tortoise. Prevention of hazardous ground fuel build up by herbicide application could negatively affect gila monster by eliminating sources of cover in the short term. However, removal of weeds and a reduction in the risk of a future catastrophic wildfire would have positive long-term effects on habitat components. Gila monsters will not specifically be surveyed for and relocated prior to treatments. Burrows could be crushed by drill seeding. Mechanical treatments would be expected to increase the potential for erosion immediately following treatment, resulting in some sediment inflow into burrows. Like ash and sediment resulting from fire, this sediment could cause mortality by smothering eggs.

Common chuckwalla: Similar life histories and habitat requirements as the tortoise. Prevention of hazardous ground fuel build up by herbicide application could negatively affect common chuckwalla by eliminating sources of cover in the short term. However, removal of weeds and a reduction in the risk of a future catastrophic wildfire would have positive long-term effects on habitat components. Chuckwallas will not specifically be surveyed for and relocated prior to treatments. Burrows could be crushed by drill seeding. Mechanical treatments would be expected to increase the potential for erosion immediately following treatment, resulting in some sediment inflow into burrows. Like ash and sediment resulting from fire, this sediment could cause mortality by smothering eggs.

Sensitive bat spp. Out at night when work is not being done.

Alt. B: Wildlife

Short-term:

Small amount of disturbance to some individuals during treatment implementation. No impacts.

Long-term:

Increased amounts and quality of native species on 2,836 acres (Cedar Wash, Jacob, and Nevershine Fires) as native seeded grass species become established, and are protected from grazing.

Improved vertical vegetation structure on 2,836 acres as the seeded native shrub and tree species become established.

Small increases in amounts of native vegetation species on 137 acres (Cockscomb Fire) as native seeded grass species become established, and are protected from grazing.

Small increases in vertical vegetation structure on 137 acres as the seeded native shrub and tree species become established.

There would be an increase in forage and cover for mule deer and big horn sheep.

Alt. B: Vegetation

Short-term:

Long-term:

Increased amounts and diversity of native species on 2,836 acres (Cedar Wash, Jacob, and Nevershine Fires) as native seeded grass species become established, and are protected from grazing.

Improved vertical vegetation structure on 2,836 acres as the seeded native shrub and tree species become established.

Small increased in amounts and diversity of native species on 137 acres (Cockscomb Fire) as native seeded grass species become established, and are protected from grazing.

Small increase vertical vegetation structure on 137 acres as the seeded native shrub and tree species become established.

Alt. B: Soil

Short-term:

Typically, at least 20% of the soil crust is disturbed by a rangeland drill, according to Mike Marsh (Conservation Committee, in the Shrub-Steppe Symposium, Part II).

Minimal erosion impacts on 551 acres due to drill seeding, 21 miles of fence building, and reduced effective ground cover due to residual effects of herbicide application on 2,836 acres.

Long-term:

Increased amounts and quality of effective ground cover on 2,836 acres (Cedar Wash, Jacob, and Nevershine Fires) as native seeded grass species become established, and are protected from grazing.

Small increases in amounts and quality of effective ground cover on 137 acres (Cockscomb Fire) as native seeded grass, shrub and tree species become

established, and are protected from grazing.

Continued erosion from minimal effective ground cover on 435 acres (Brumley Fire), even though the area is protected from grazing, as past application of aerial seeding alone has not proved to provide for successful germination and establishment of native species. Ideal winter and spring precipitation after seeding would improve the situation via the establishment of perennial grasses over the annuals.

Alt. B: Cultural

Impacts to cultural resources would be minimized to the extent possible. Should any historic properties (sites eligible for the National Register of Historic Places) be identified during the cultural resource inventories, they would be flagged and avoided by any surface disturbing activities. Revegetation of burned areas should help decrease erosion which will benefit cultural resources by stopping displacement of artifacts and degradation of any cultural features. If human remains or sacred objects are encountered during the stabilization or rehabilitation projects, then the inadvertent discovery provisions of NAGPRA would apply and would be followed.

Alt. B: Recreation

While the use of a rangeland drill at the Cedar Wash and Cockscomb project sites would slightly impact physical recreation settings and recreation opportunities in the short term due to the temporary presence of vehicle tracks and drill furrows, in the long-term, these impacts would be reduced or eliminated due to wind, rain and project success. Likewise, the construction of new fencing would have a slight to minor impact to recreation settings and recreation activity opportunities in the short-term due to fencing as an impediment to access, as well as the increase in evidence of human use created by the placement of the fencing. In the long-term, with the removal of the fencing upon achievement of project objectives, fencing would have no impact to recreation settings and activity opportunities.

Alt. B: Visual Resources

The long-term success of the proposed action could contribute to reducing the visual contrast created by the fires. The seed mixture, if successful, would contribute to re-establishing a variety of visual forms, lines, colors and textures where fire has virtually eliminated any variety due to the monotypic "look" of pioneering annual grasses. Conversely, in the short term, the proposed action would create slight to minor visual contrast from the use of a rangeland drill and the residual vehicle tracks and long, linear furrows. Also in the short-term, the proposed action would add weak to moderate horizontal structural lines to the landscape, due to the construction of temporary perimeter fencing. In the long-term, these effects would be negligible to nonexistent with the establishment of the native seed mix and the removal of the fencing.

Alt. B: Grazing Management

Both Cottonwood and the Mosby-Nay Allotments have year round livestock

grazing. During the short term, livestock forage on the burnt areas has been lost, but in the long-term forage would again be available. During the interim, in the remainder of the grazing allotments outside of the treatment areas, livestock grazing operations would continue to function as normal with grazing monitored annually to ensure compliance with grazing permit and allotment management plan.

Alt. B: Wild Horses and Burros

Minimal impact can be expected to the few remaining wild burros.

Alt. B: Socio/Economic

Impacts to the socio/economic environment would consist of non-measurable increases in use of tourist facilities as outside contractors execute contracts for treatment implementation.

CUMULATIVE IMPACTS OF ALTERNATIVE B.

Impacts of human activities within the area were analyzed in the Arizona Strip RMP.

The cumulative impacts of the Proposed Action with past and reasonably foreseeable future actions are indiscernible.

IMPACTS OF ALTERNATIVE C, NO ACTION

Existing situations and conditions would continue under this alternative.

Alt. C: Resources of Importance to American Indians

Impacts from the No Action alternative could cause significant damage to areas of importance to American Indian tribes. Potential soil erosion could cause damage to cultural sites, water sources, as well as displacement of native plant species by invasive species.

Alt. C: ACECs

The proposed project area within the ACEC (Nevershine 624 ac.) would continue to be dominated by cheat grass. Native vegetation would be very slow to develop due to competition from cheat grass. The fire return interval would be reduced and subsequent fire could prevent native vegetation from becoming established for decades, if at all.

Alt. C: Wilderness Characteristics

The No Action alternative should not preclude future management consideration of these areas for maintaining wilderness characteristics.

Alt. C: Special Status Species

Short-term: No impact.

Long-term:

The project area (3,268ac.) would continue to be dominated by cheat grass. Native vegetation would be very slow to develop due to competition from cheat grass. The fire return interval would be reduced and subsequent fire could prevent native vegetation from becoming established for decades.

- Desert tortoise. Habitat alteration from nonnative vegetation and altered fire regime.
- Bald eagle. Nonnative vegetation may impede visual location of prey.
- California condor. Nonnative vegetation may impede visual location of carrion.
- Peregrine. Nonnative vegetation may impede visual location of prey.
- Ferruginous hawk. Nonnative vegetation may impede visual location of prey.
- Western burrowing owl. Nonnative vegetation could reduce habitat quality and ability to locate prey visually.
- Loggerhead shrike. Nonnative vegetation may impede visual location of prey.
- Banded gila monster. Similar life histories and habitat requirements as the tortoise.
- Common chuckwalla. Similar life histories and habitat requirements as the tortoise.
- Sensitive bat spp. Prey base could change. May effect.

Alt. C: Wildlife

Short-term: No impacts.

Long-term: The project area (3,268ac.) would continue to be dominated by cheat grass. Native vegetation would be very slow to develop due to competition from cheat grass. The fire return interval would be reduced and subsequent fire could prevent native vegetation from becoming established for decades. Native wildlife will be negatively impacted.

Alt. C: Vegetation

Short-term: No impacts.

Long-term: The project area (3,268 ac.) would continue to be dominated by cheat grass. Native vegetation would be very slow to develop due to competition from cheat grass. The fire return interval would be reduced and subsequent fire could prevent native vegetation from becoming established for decades.

Alt. C: Soil

Short-term: Increased erosion from minimal effective ground cover on 3,268 acres not

treated.

Long-term: Reduced biomass productivity due to increased erosion and loss of very thin A soil horizons. Recurrence of clear-burn fire regime and related erosion as cheat grass dominates the ground cover.

Alt. C: Cultural

The No Action Alternative would leave cultural resources vulnerable to erosion of soil on and near sites. This would increase the displacement of artifacts and could undermine and destroy any cultural features present.

Alt. C: Recreation

The No Action Alternative could leave recreation settings vulnerable to erosion and degradation, and high-quality recreation experience opportunities (such as viewing scenery and vehicle exploration along roads and trails) diminished or unavailable.

Alt. C: Visual Resources

The No Action Alternative would result in the slow reduction of the visual contrast that was created by the 2005 fires. This would occur primarily by the 2006 spring growth of non-native annual grasses. However, any visual diversity of native and non-native plant species form, line, color and texture existing prior to the 2005 fires would not be re-established by the No Action Alternative in the foreseeable future, leaving the project area with essentially a vegetative monotype.

Alt. C: Grazing Management

Under the no action alternative AUMs would not be reduced and livestock would continue to graze under current grazing permit as described in the allotment management plan. In addition the other areas burned wouldn't receive protection from livestock grazing. Subsequently, recovery of the burned areas would take longer.

Alt. C: Wild Horses and Burros

No impact to wild horses and burros.

Alt. C: Socio/Economic

No impacts.

CUMULATIVE IMPACTS OF NO ACTION, ALT C

The cumulative impacts of doing nothing would result in continued and unacceptable loss of soil, native vegetation, and tortoise habitat from wildfires in the reasonably foreseeable future.

V. CONSULTATION AND COORDINATION

This EA was prepared by Grand Canyon - Parashant National Monument of the Bureau of

Land Management, 345 E. Riverside Drive, St. George, Utah 84790. Phone (435-688-3345).

| | |
|-----------------------------|---|
| Kathleen Harcksen | Team Lead & Writer/Editor |
| Scot Franklin | Wildlife, T&E Species, ACEC |
| Michelle Bailey & Tom Folks | Recreation, Visual Resources |
| Diana Hawks | Cultural Resources |
| Gloria Benson | Native American Concerns |
| Phil Seegmiller | Grazing Management |
| LD Walker | Noxious, exotic, invasive Weeds, Wild Horse and Burro |
| Bob Smith | Soil, Air and Water |

This EA was reviewed by:

| | |
|----------------|--|
| Michael Herder | Wildlife, T&E Species, ACEC |
| John Herron | Cultural Resources |
| Hilary Boyd | Financial Manager, Fire Rehabilitation |
| Laurie Ford | Lands and Realty |
| Ron Wadsworth | Law Enforcement |
| Ray Klein | NPS Law Enforcement |
| Dennis Curtis | Monument Manager |
| Brenda Smith | USFW, Section 7 Consultation |
| Leslie DeFalco | USGS |
| Todd Esque | USGS |

The following agencies or individuals have been consulted with, or provided recommendations to this EA:

Arizona Department of Game and Fish
Northern Arizona University
US Geological Survey
US Fish and Wildlife Service

A Notice of Availability of the Environmental Analysis was sent to those on the Arizona Strip District

Office NEPA mailing list.

APPENDICES

Appendix A. Terms and Conditions from Biological Opinion 2-21-96-F-132

The following Terms and Conditions implement Reasonable and Prudent and Measure 1.

For each authorized project, the Bureau shall designate a field contact representative (FCR) who shall be responsible for overseeing compliance with these terms and conditions and for coordination on compliance with the Service. The FCR, qualified biologist(s) approved by the Bureau, and authorized biologist (see term and condition 1.i.) shall have the authority and the responsibility to halt all project activities that are in violation of these terms and conditions. These individuals shall have a copy of the terms and conditions of this biological opinion while on the work site.

A desert tortoise education program shall be presented to all project personnel that may encounter tortoises; such as employees, inspectors, supervisors, contractors, and subcontractors; prior to initiation of activities that may result in disturbance of desert tortoise habitat or death or injury of desert tortoises. The education program will include discussions of the following:

- Legal protection of the desert tortoise and sensitivity of the species to human activities;
- A brief discussion of desert tortoise distribution and ecology;
- The terms and conditions of this biological opinion;
- Project features designed to reduce adverse effects to desert tortoises and their habitat, and to promote the species' long-term survival;
- Protocols during encounters with desert tortoises and associated reporting requirements; and
- The definition of take and penalties for violations of Federal and State laws.

To the extent possible, project features shall be located in previously-disturbed areas or outside of desert tortoise habitat.

Project vehicle use shall be limited to designated routes (existing routes prior to designation) to the extent possible.

Areas of new construction or disturbance shall be flagged or marked on the ground prior to construction. All construction workers shall strictly limit their activities and vehicles to areas that have been marked. Construction personnel shall be trained to recognize markers and understand the equipment movement restriction involved.

During the tortoise active season (March 15 through October 15), project features that might trap or entangle desert tortoises such as open trenches, pits, open pipes, etc shall be covered or modified to prevent entrapment.

To the extent possible, project activities shall be scheduled when tortoises are inactive (October 15 through March 15).

If a tortoise or clutch of tortoise eggs is found in project area, to the extent practicable activities shall be modified, to avoid injury or harming it. If activities cannot be modified, the tortoise/clutch shall be moved from harm's way by an authorized biologist the minimum distance possible within appropriate habitat to ensure its safety from death, injury, or collection associated with the project or other activities. (See the biological opinion for handling requirements.) The authorized biologist shall be allowed some discretion to ensure that survival of each relocated desert tortoise/clutch is likely. Desert tortoise/clutches shall not be transported to lands outside the administration of the Federal government without the written permission of the landowner. Handling procedure for desert tortoises and their eggs shall adhere to protocols outlined in Desert Tortoise Council (1994 with 1996 revisions).

Only biologists authorized by the Service and Arizona Game and Fish Department shall handle desert tortoises. The Service authorizes Tim Duck, Michael Herder, Robert Douglas, and Linda Price of the Bureau to handle desert tortoises in accordance with these terms and conditions. If the Bureau desires

other biologists be authorized, the names(s) of the proposed authorized biologist(s) shall be submitted to the Service for review and approval at least 15 days prior to the onset of activities that could result in a take. The authorized biologist shall maintain a record of all desert tortoises encountered during project activities. This information shall include for each desert tortoise:

- The locations and dates of observation
- General condition and health, including injuries and state of healing and whether animals voided their bladders
- Location moved from and location moved to
- Diagnostic markings (i.e., identification numbers of marked lateral scutes)

No notching of scutes or replacement of fluids with a syringe is authorized.

Desert tortoises that are handled shall be marked for future identification. An identification number (using the acrylic paint/epoxy technique) shall be placed on the 4th costal scute (Fish and Wildlife Service 1992).

At no time shall vehicle or equipment fluids be dumped on public lands. All accidental spills must be reported to the Bureau and cleaned up immediately, using the best available practices according to the requirement of the law. All spills of federally or State-listed hazardous materials that exceed reportable quantities shall be promptly reported to the appropriate State agency and the Bureau.

For surface disturbing activities conducted from March 15 to October 15 in desert tortoise habitat, construction and operation activities shall be monitored by a qualified desert tortoise biologist approved by the Bureau. The biologist shall be present during all activities in which encounters with tortoises may occur. The biologist shall watch for tortoises wandering into construction areas, check under vehicles, check at least three times per day any excavations that might trap tortoises, and conduct other activities necessary to ensure that death or injury of tortoises is minimized.

In DWMA/ACECs, vehicles associated with Bureau-authorized projects traveling on unpaved roads in desert tortoise habitat shall not exceed speed limits established by the Bureau as necessary to protect desert tortoises. These speed limits will generally not exceed 40 mph even on the best unpaved roads but may be much less on some roads.

Temporary fencing, such as snow fencing, chain link, and other suitable materials shall be used in designated areas as determined by the Bureau to reduce encounters with tortoises from March 15 to October 15 on short-term projects, such as construction of power lines, burial of fiber optic cables, etc., where encounters with tortoises are likely.

Temporary access routes created during project construction shall be modified as necessary to prevent further use. Closure of access routes could be achieved by ripping, barricading, posting the route as closed, and/or seeding and planting with native plants.

To reduce attraction of potential desert tortoise predators, project sites in desert tortoise habitat shall be maintained in a sanitary condition at all times; waste materials at those sites shall be placed in covered receptacles and disposed of promptly as an appropriate waste disposal site. "Waste" refers to all discarded matter, including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes and equipment. All reasonable effort shall also be taken to reduce or eliminate water sources associated with project activities that might attract ravens and other predators.

After completion of the project, trenches, pits, and other features in which tortoises could be entrapped or entangled, shall be filled in, covered, or otherwise modified so they are no longer a hazard to desert tortoises.

After project completion, measures shall be taken to facilitate restoration. Restoration techniques shall be tailored to the characteristics of the site and the nature of project impacts. Techniques may include removal of equipment and debris, re-contouring, and seeding, planting, transplanting of cacti and yuccas, etc. Only

native plant species, preferably from a source on or near the project area, shall be used in restoration.

The following terms and conditions implement reasonable and prudent measure number 2:

The Bureau shall prohibit live vegetation harvest, except salvage in areas where surface disturbance has been authorized.

The Bureau shall prohibit mechanical treatment or vegetation conversion within DWMAs/ACECs unless such treatments benefit or improve desert tortoise management. A mitigation plan for each treatment or conversion shall be developed and approved by the Service. A determination that such treatment or conversion benefits or improves desert tortoise management shall require concurrence by the Service.

The Bureau shall, in coordination with the Service, complete a proposal to close roads and designate routes in the DWMAs/ACECs by September 30, 1998. The proposal shall be finalized and implementation shall begin by September 30, 1999. Roads targeted for closure shall include those that 1) have no purpose, 2) are duplicative or redundant, or 3) are causing high levels of mortality of tortoises. Vehicles shall be restricted to designated routes only. The closure/route designation plan shall be approved by the Service. Implementation of the closure/designation plan shall include the following actions 1) sign entry portals/major intersections with signs that read "Limited to Designated Roads and Trails", 2) sign all designated routes as open, 3) and sign along designated routes indicating that driving off of designated routes is not permitted.

The Bureau shall maintain or authorize maintenance of existing roads in desert tortoise habitat in accordance with the schedules and specifications in Table 2, except that non-emergency maintenance activities shall be conducted from October 15 to March 15. Operators of graders and other maintenance equipment shall attend the education program described in term and condition 1.b. Maintenance activities shall be limited to previously disturbed areas, unless cleared by a qualified biologist in accordance with the terms and condition 4.

The Bureau shall restrict vehicle-based camping in DWMAs/ACECs to within 50 ft of designated routes. Before route designation, vehicle-based camping shall be limited to within 50 ft of existing routes. No camping shall be authorized for longer than 14 consecutive days in any one area.

The Bureau shall authorize no translocations of desert tortoises from private to public lands unless 1) prior authorization from the Service and Arizona Game and Fish Department is obtained, 2) the desert tortoise population in the area to which a tortoise(s) would be moved is depressed, 3) testing of animals to be translocated is conducted to ensure that spread of URTD or other diseases is not facilitated as a result of translocation, 4) handling of desert tortoises is in compliance with term and condition 1.i., and 5) protocols are followed to ensure that translocated animals have the greatest chance for survival and do not disrupt the behavior of resident animals.

The Bureau shall continue to monitor and patrol the DWMAs/ACECs and desert tortoise habitat, and to investigate illegal activities on public lands in the area. The Bureau shall provide law enforcement presence in the DWMAs/ACECs at a level adequate to promote public compliance with regulations.

If law enforcement, signing, and public education fail to control illegal public use and violations of DWMA/ACEC regulations, the Bureau shall develop other options, including fencing areas as needed to enhance compliance with regulations.

The Bureau shall authorize no discharge of firearms in the DWMAs/ACECs, except for hunting of big game or upland game birds from September through February.

The Bureau shall assess compensation at the category 1 rate for any proposed projects in the Beaver Dam, Virgin Slope, and Pakoon DWMAs/ACECs.

The following term and condition implements reasonable and prudent measure number 4:

Prior to any surface-disturbing activities associated with “projects” work site shall be surveyed for desert tortoises by a qualified biologist approved by the Bureau. Areas of new disturbance shall be surveyed with 100 percent coverage. For project activities occurring during the desert tortoise active season (March 15 through October 15), surveys shall be conducted within 24 hours of initiation of surface-disturbing activities.

Between October 15 and March 15 any new disturbance shall be preceded by 100-percent surveys conducted within one week of the proposed activities. During surveys, occupied desert tortoise burrows in or within 40 feet of areas to be disturbed shall be excavated using hand tools under the supervision of an authorized biologist. Burrows discovered in areas to be disturbed by project activities shall be collapsed or blocked to prevent entry by tortoises (any tortoise in those burrows shall be relocated first). Desert tortoises and any desert tortoise eggs found in areas to be disturbed shall be relocated in accordance with term and condition 1.i. All handling of desert tortoises and their eggs shall be in accordance with term and condition 1.i.

Appendix B. Project Maps

Appendix C. Project Area Legal Descriptions (by fire)

Legal Descriptions

- Brumley:** T37N, R15W, Sec. 29, SW $\frac{1}{4}$ SE $\frac{1}{4}$, S $\frac{1}{2}$ SW $\frac{1}{4}$
32, NW $\frac{1}{4}$, SW $\frac{1}{4}$, NE $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$
- T36N, R15W, Sec. 5, N $\frac{1}{2}$ NW $\frac{1}{4}$, NW $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$
6, NE $\frac{1}{4}$ NE $\frac{1}{4}$
- Cockscomb:** T36N, R16W, Sec. 20, S $\frac{1}{2}$ SW $\frac{1}{4}$
19, SE $\frac{1}{4}$ SE $\frac{1}{4}$, Lot 4
29, NW $\frac{1}{4}$, SW $\frac{1}{4}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$ SE $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$
30, NE $\frac{1}{4}$ NE $\frac{1}{4}$
- Jacob:** T36N, R16W, Sec. 3, S $\frac{1}{2}$ SW $\frac{1}{4}$
4, SE $\frac{1}{4}$ SE $\frac{1}{4}$
9, NE $\frac{1}{4}$, E $\frac{1}{2}$ SE $\frac{1}{4}$
10, ALL
11, NW $\frac{1}{4}$, SW $\frac{1}{4}$, NW $\frac{1}{4}$ SE $\frac{1}{4}$, S $\frac{1}{2}$ SE $\frac{1}{4}$
14, NE $\frac{1}{4}$, NW $\frac{1}{4}$, SW $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$
15, All
16, E $\frac{1}{2}$ NE $\frac{1}{4}$, E $\frac{1}{2}$ SE $\frac{1}{4}$
22, E $\frac{1}{2}$ NW $\frac{1}{4}$, NW $\frac{1}{4}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$, NE $\frac{1}{4}$
23, W $\frac{1}{2}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$ NW $\frac{1}{4}$, W $\frac{1}{2}$ SW $\frac{1}{4}$
- Nevershine:** T33N, R15W, Sec. 13, W $\frac{1}{2}$ SW $\frac{1}{4}$
14, SE $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$
22, E $\frac{1}{2}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$
23, N $\frac{1}{2}$, SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$
24, NW $\frac{1}{4}$ NW $\frac{1}{4}$
26, N $\frac{1}{2}$ NW $\frac{1}{4}$, NW $\frac{1}{4}$ NE $\frac{1}{4}$
- Cedar Wash:** T37N, R15W, Sec. 18, SW $\frac{1}{4}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$
19, N $\frac{1}{2}$, SE $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ SW $\frac{1}{4}$
20, W $\frac{1}{2}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ NW $\frac{1}{4}$
30, W $\frac{1}{2}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ NW $\frac{1}{4}$
- T37N, R16W, Sec. 24, SE $\frac{1}{4}$
25, E $\frac{1}{2}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$ NE $\frac{1}{4}$

Appendix D. OUST®XP Standard Safety Measures

OUST®XP handlers would avoid contact with eyes, skin or clothing. They would avoid breathing dust or OUST®XP spray mist. They would wash thoroughly with soap and water after handling.

Applicators and other handlers must wear long-sleeved shirts, long pants, waterproof gloves, socks, and shoes. Clothing must be removed immediately if OUST®XP gets inside. Then wash body thoroughly and put on clean clothing. Wash contaminated clothing before reuse.

Personal protective equipment would be cleaned and/or maintained according to manufacturer's instructions. If no such instructions exist for washables, use detergent and hot water. Keep and wash personal protective equipment separately from other laundry.

Do not store or consume food, drink, or tobacco in areas where they may become contaminated with OUST®XP. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

Do not enter or allow worker entry into treated areas during the restricted entry interval of 12 hours. For early entry to treated areas, as permitted under the Worker Protection Standard (40 CFR part 170) and that involves contact with anything that has been treated, the following personal protective equipment must be worn: coveralls, waterproof gloves, and shoes and socks.

OUST®XP Chronic Toxicity

Several toxic effects have been seen with chronic exposure to OUST®XP rats. At low doses, relative to the compounds LD50 (50mg/kg), the rats experienced a reduced red blood cell count, and an increase in liver weight. In this study rats were fed the compound in their food for a year. In a two year feeding study, no effects were noted below 50 mg/kg.

No reproductive related effects were noted in rats fed up to 500mg/kg of OUST®XP in their diets. The test was conducted over two successive generations of offspring.

In one rat study and two rabbit studies, the mothers were fed moderate to high doses (up to 750mg/kg) of OUST®XP. No birth defects were noted in their respective offspring.

There is little likelihood that the compound would pose a significant teratogenic risk to humans under normal conditions. The compound was not mutagenic in a variety of tests conducted on Salmonella cells and Chinese Hamster ovary cells, thus it is unlikely that the compound would pose a mutagenic risk to humans at low exposure levels. No carcinogenic effects have been detected in either rats or mice at low to moderate doses of OUST®XP.

OUST®XP is readily absorbed through the gastrointestinal tract and is rapidly broken down and removed from the organism. Half lives of the compound in rats ranged from 28 to 40 hours depending on the dose (16mg/kg and 3000 mg/kg respectively). The compound did not accumulate in the rats that were studied. OUST®XP can cause eye irritation but the condition usually clears within several days following exposure.

OUST®XP Ecological Effects

OUST®XP is non-toxic to tortoise and practically non-toxic to birds. LD50 for mallards is greater than 5,000 mg/kg.

OUST®XP Environmental Fate

OUST®XP is absorbed by the leaves and roots of the weed and stops plant growth by inhibiting cell division in growing tips, roots and shoots. OUST®XP has a half-life of approximately one month in soil. In several field dissipation studies half of the initial applied amount of the compound remained for one to three weeks, depending on the soil type and vegetative cover. It remains in the soil longer with cool temperatures, low soil moisture, or alkaline soil pH.

Soil microorganisms and chemical hydrolysis break down OUST®XP. Exposure to sunlight speeds up the process of breakdown and in bright light OUST®XP has a half life of one to three days. One year after application, only 1% of the OUST®XP applied remained in Eastern soils, which are more acidic than Western soils.

Information Sources:

Pesticide Fact Sheet: Prepared for the USFS by Information Ventures, Inc., 1994 - 2005

Extension Toxicology Network, May 1994

Appendix E. Cultural Resource Project Report

